

- 212** Regulation of Vesicle Formation in an Insect Cell Line. H. OBERLANDER,* S. M. Ferkovich, and D. E. Lynn¹,* USDA/ARS, P.O. Box 14565, Gainesville, FL 32604
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Established insect cell lines (IAL-TND1, and IAL-SFD1) derived from Lepidopteran imaginal discs lose their vesicular form and produce solid cellular aggregates after ca. 30 passages or 100 passages for TND1 and SFD1 lines, respectively. A factor derived from larval hemolymph can restore the vesicular morphology in vitro in the cell lines even after a year or more of aggregate formation. The hemolymph factor designated "VPA" for "vesicle promoting activity" loses activity after 5 mins at 60°C. It was not dialyzed across membrane with a 60,000 M.W. cut off. In addition VPA lost activity after treatment with Protease type XIV, but not trypsin. VPA was released into the culture medium by larval fat body and imaginal discs. Reduced serum concentration in the medium induced aggregate formation in vesicle producing cultures, and addition of the original serum level restored vesicle production. However, cultures that produced aggregates spontaneously could not be induced to yield vesicles with additional serum. Thus, VPA from insect larval hemolymph has activity that is distinctive from the vertebrate serum used in the culture medium. VPA is being purified with gel permeation chromatographic and electrophoretic techniques.